

## Chronic Disease Technical Notes

### Hospitalization Indicators

**Arthritis:** Includes osteoarthritis cases of all body regions. (ICD-9 CM code 715.)

**Asthma:** Includes asthma cases defined as extrinsic, intrinsic, and chronic obstructive, exercise induced bronchospasm, cough variant, and unspecified type. (ICD-9 CM code 493.)

**Cardiovascular Disease:** Includes cases defined as rheumatic fever with heart involvement, diseases of mitral, aortic valves, and other endocardial structures, essential and secondary hypertension, hypertensive heart disease, hypertension with or without renal disease, myocardial infarction, ischemic heart disease, angina, coronary atherosclerosis, pulmonary heart disease, pericarditis, endocarditis, myocarditis, cardiomyopathy, conduction disorders, cardiac dysrhythmias, heart failure, subarachnoid, intracerebral, and other types of hemorrhages, occlusion of cerebral arteries, transient cerebral ischemia, cerebrovascular diseases, atherosclerosis, aortic aneurysm, arterial embolism, and thrombosis, disease of capillaries, and septic arterial embolism. (ICD-9 CM codes: 391-398, 401-402, 404-405, 410-417, 420-438, 440-445, 447-449.)

**Chronic Obstructive Pulmonary Disease:** Includes cases of bronchitis, emphysema, bronchiectasis, and chronic airway obstruction. (ICD-9 CM codes: 490-492, 494, 496.)

**Diabetes:** Includes cases of diabetes with mellitus ketoacidosis, hyperosmolarity, renal manifestations, ophthalmic manifestations, neurological manifestations, peripheral circulatory disorders, and with other specified and unspecified complications. Excludes cases of gestational diabetes. (ICD-9 CM code: 250.)

**Heart Disease:** Includes cases defined as rheumatic fever with heart involvement, diseases of mitral, aortic valves, and other endocardial structures, hypertensive heart disease, hypertension with renal disease, myocardial infarction, ischemic heart disease, angina, coronary atherosclerosis, chronic pulmonary heart disease, pericarditis, endocarditis, myocarditis, cardiomyopathy, conduction disorders, cardiac dysrhythmias, and heart failure. (ICD-9 CM codes: 391-398, 402, 404, 410-416, 420-429.)

**Hypertension:** Includes cases of essential hypertension, hypertensive heart disease, hypertensive chronic kidney disease, and secondary hypertension. (ICD-9 CM codes: 401-405.)

**Stroke:** Includes cases of subarachnoid, intracerebral, and other types of hemorrhages, occlusion of cerebral arteries, transient cerebral ischemia, cerebrovascular diseases. (ICD-9 CM codes: 430-438.)

### Chronic Disease Death Indicators

**Chronic Obstructive Pulmonary Disease:** Includes cases of death with primary mention of bronchitis, chronic bronchitis with mucopurulent, emphysema, bronchiectasis, and other chronic obstructive pulmonary disease. (ICD 10 codes: J40-J44, J47.)

**Diabetes :** Includes cases of death with primary mention of type 1 diabetes, type 2 diabetes, diabetes due to malnutrition. Excludes cases of gestational diabetes. (ICD 10 codes: E10-E14.)

**Heart Disease :** Includes cases of death with primary mention of rheumatic fever, rheumatic fever with heart involvement, rheumatic chorea, chronic rheumatic heart diseases, hypertensive heart disease, hypertensive heart and renal disease, ischaemic heart diseases, pulmonary heart disease, and other forms of heart disease such as acute pericarditis, disease of pericardium, endocarditis, nonrheumatic heart valve disorders, acute myocarditis, cardiomyopathy, atrioventricular and blockage, conduction disorders, cardiac arrest, tachycardia, atrial fibrillation and flutter, arrhythmias, and heart failure. (ICD 10 codes: I00-I09, I11, I13, I20-I51.)

**Hypertension :** Includes cases of death with primary mention of essential hypertension, hypertensive heart disease, hypertensive renal disease, hypertensive heart and renal disease, and secondary hypertension. (ICD 10 codes: I10-I15)

**Stroke:** Includes cases of death with primary mention of subarachnoid hemorrhage, Intracerebral hemorrhage, nontraumatic intracranial hemorrhage, cerebral infarction, stroke not specified as hemorrhage or infarction, occlusion and stenosis of precerebral arteries, other cerebrovascular diseases and disorders including sequelae of cerebrovascular diseases. (ICD 10 codes: I60-I69)

### **Data Source Description for Chronic Disease**

#### **Hospitalization Data**

The chronic disease indicator data are drawn from the inpatient discharge dataset provided to Virginia Department of Health (VDH) by Virginia Health Information (VHI). These data represent all in-state, acute care, inpatient discharges occurring to Virginia residents. Virginia residents hospitalized out of state would not be included, and non-acute hospitalizations have been excluded from the indicator calculations. Hospital discharge rate is age-adjusted based on 2000 U.S population standard and calculated per 10,000 individuals. The cases include individuals that are admitted into a hospital and do not include emergency department visits. Cases have been assigned to localities based on residence at time of discharge. However, geographic specification of cases in these data are more approximate than exact, so there may be some misspecification of where a case resided with neighboring areas on the map. Total hospitalization charges are the sum of billed charges of all hospitalizations for a chronic disease indicator. Total charges do not reflect total costs of hospitalization or total amount paid for hospitalization.

County level rates are three year age-adjusted rolling rate estimate due to low case counts. Example: The mortality rate for 2007 for Orange County includes deaths in years 2006, 2007, and 2008 in the numerator and population of Orange County for years 2006 to 2008 in the denominator.

#### **Death Data**

The mortality injury indicator data presented are drawn from the Virginia resident death certificate dataset provided by the VDH Division of Health Statistics. These data represent all Virginia resident deaths, regardless of where the death occurred. Virginia residents who died out of state would therefore be included, and geographic assignment of cases within these data is based on residence at time of death, as recorded on the death certificate. Death rate is age-adjusted based on 2000 U.S population standard and calculated per 100,000 individuals.

County level rates are three year age-adjusted rolling rate estimate due to low case counts. Example: The mortality rate for 2007 for Orange County includes deaths in years 2006, 2007, and 2008 in the numerator and population of Orange County for years 2006 to 2008 in the denominator.